

**Multifactorial Prediction of Depression Diagnosis and Symptom Dimensions**

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**INTRO**

- Depression has rarely been studied in the context of multiple etiological mechanisms simultaneously.
- Additionally, research has largely compared depressed individuals to “hyper-clean” healthy controls, which fails to tease apart specificity to the disorder.

**METHODS**

1. N = 215 (currently depressed, MDD = 60, Psychiatric Control, PC = 54, and No Current Psychopathology, NP = 101).
2. Secondary analysis of a multi-modal dataset consisting of sociodemographic, psychometric, genetic, neuroimaging, actigraphy, and cognitive task data.
3. We used elastic net regularized regression to classify individuals into MDD, PC or NP groups. Performance of the models was estimated using predictive R-squared, or the amount of variance expected to be explained in a new sample, estimated by 10 repetitions of 10-fold cross validation.

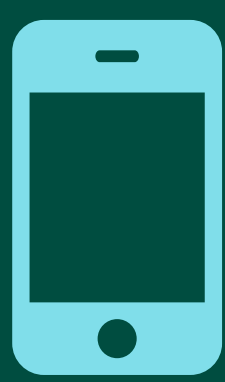
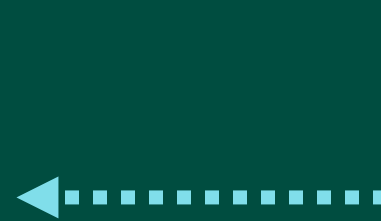
**RESULTS**

- Cross-validated models explained 22.0% of the deviance for the classification of MDD versus PC, 34.5% of the deviance for MDD versus NP, but only 0.4% of the deviance between PC and NP.

**DISCUSSION**

- Results highlight the advantage of using psychiatric controls to isolate factors specific to the condition of interest.

This study suggests self-referential processing, low positive emotionality, psychosocial functioning, and perceived sleep quality are specifically associated with Major Depressive Disorder (MDD), and highlights the benefit of using a multidimensional dataset to study complex conditions such as MDD.



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**Variable Importance Plots**

Figure 1: Variable Importance Scores for MDD vs PC

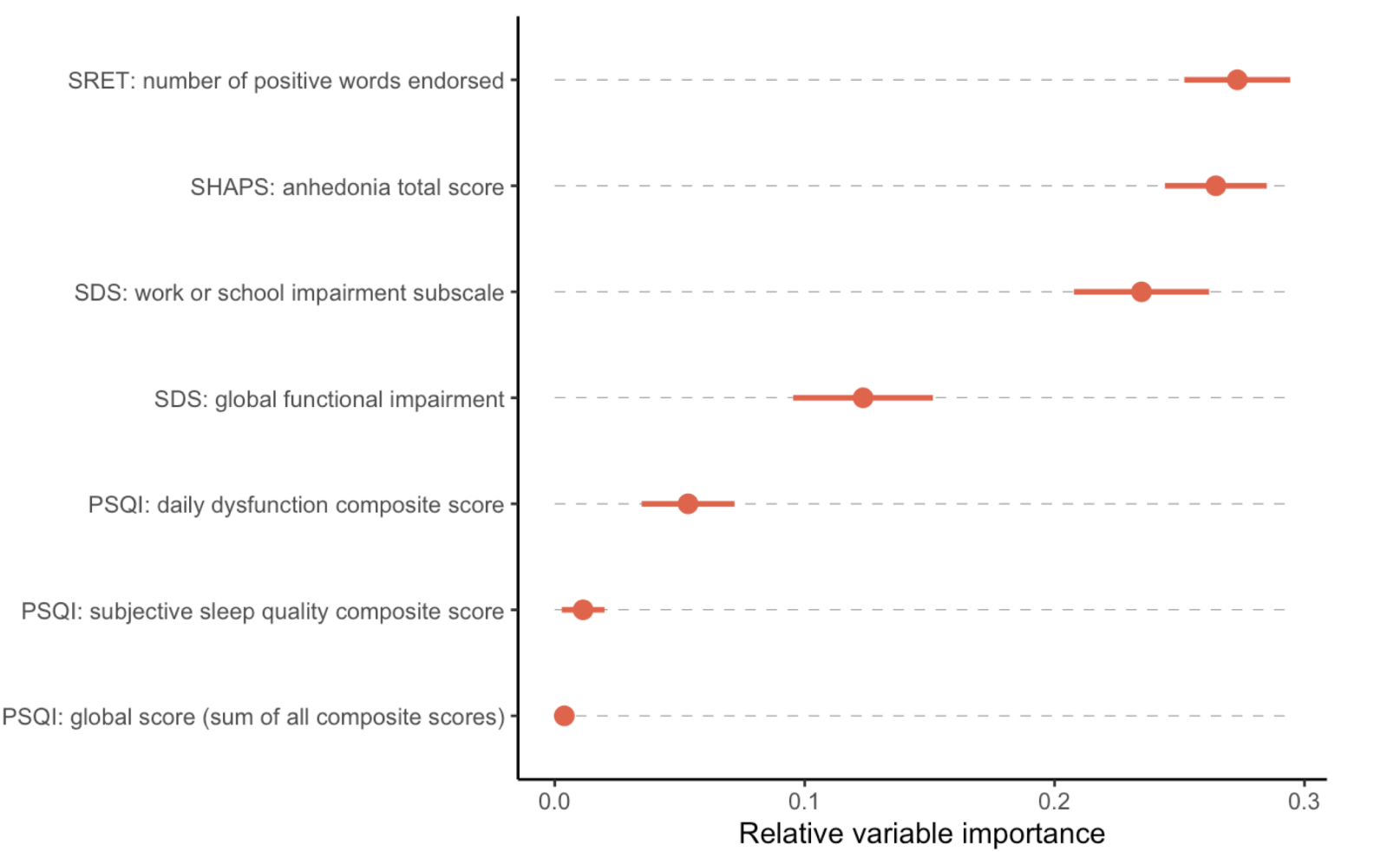


Figure 2: Variable Importance Scores for MDD vs NP

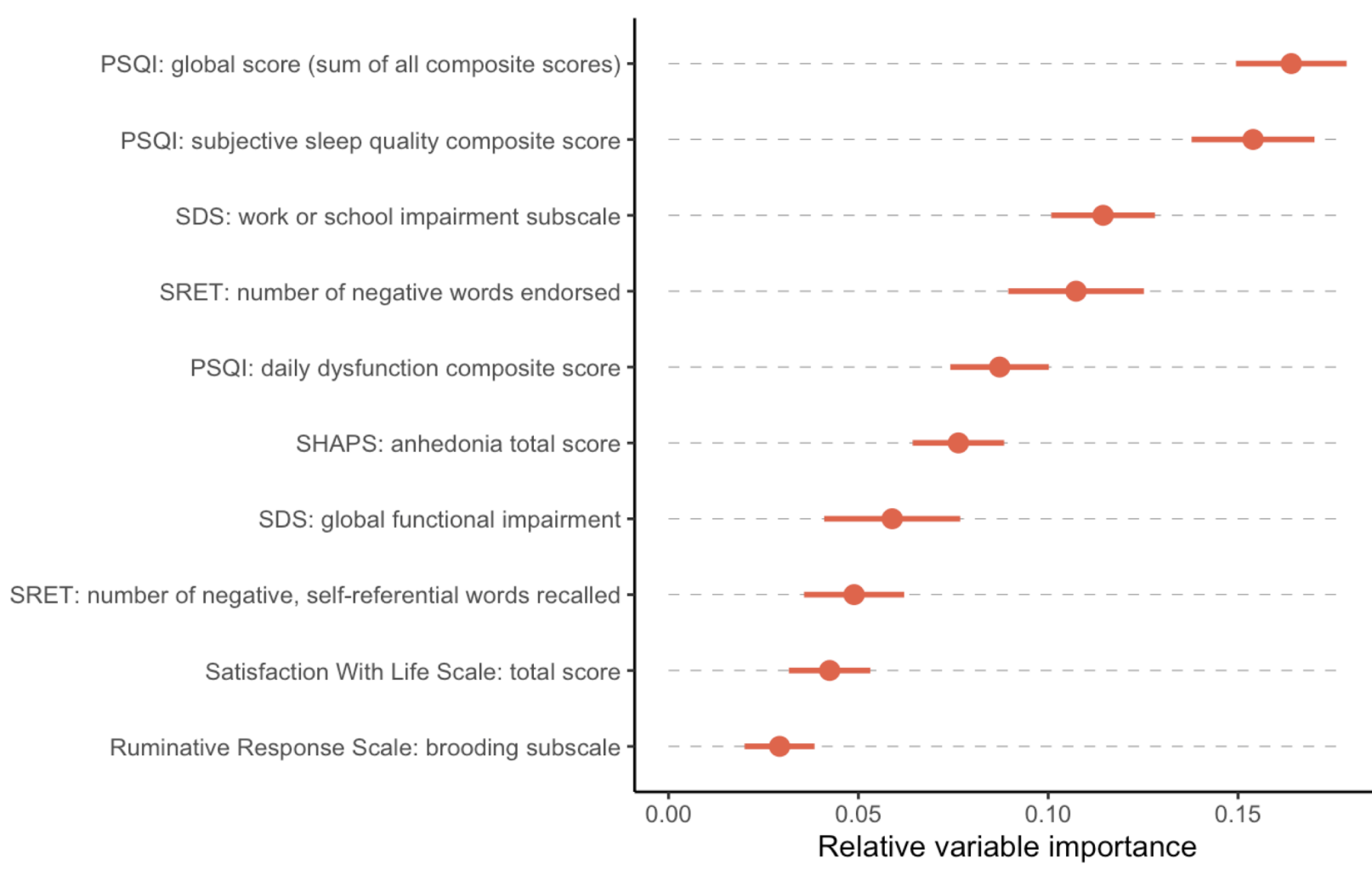


Figure 3: Variable Importance Scores for NP vs. PC

